

Stripping of Flavour-Active Compounds from Aqueous Food Streams: Effect of Liquid Matrix on Vapour-Liquid Equilibrium in a Beer-Like Solution

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Abstract : In brewing industries, stripping is a downstream process to separate volatiles from beer. Due to physiochemical similarities between flavour components, the selectivity of this method is not favourable. Besides, the presence of non-volatile compounds such as proteins and carbohydrates may affect the separation of flavours due to their retaining properties. By using a stripping column with structured packing coupled with a gas chromatography, in this work, the overall mass transfer coefficient along with their corresponding equilibrium data was investigated for a model solution consist of water, ethanol, ethyl acetate and isoamyl acetate. Static headspace analysis also was employed to derive equilibrium data for flavours in the presence of beer dry matter. As it was expected ethanol and dry matter showed retention properties; however, the effect of viscosity in mass transfer coefficient was discarded due to the fact that the viscosity of solution decreased during stripping. The effect of ethanol and beer dry matter were mapped to be used for designing stripping could.

Keywords : flavour, headspace, Henry's coefficient, mass transfer coefficient, stripping

Conference Title : ICCFE 2017 : International Conference on Chemical and Food Engineering

Conference Location : Bangkok, Thailand

Conference Dates : November 29-30, 2017